# Document Running Conditions

- Task at hand:
  - Document the current Pbar operational conditions prior to the long shutdown.
- Method:
  - **Step 1**: Create dedicated electronic logbook chapter(s) for this documentation.
  - **Step 2**: Make electronic log entries documenting our running conditions.
    - Both data plot and the procedure of how to create them should be documented.
    - Data that are not easy to reconstruct later on from the Lumberjack, etc can be particularly useful later.
  - **Step 3**: Organize entries with a web-based index
- Schedule:
  - Long Shutdown slated to start Monday, February 27th
  - Some portions require reverse protons or are destructive to stacking.
  - Need to start early enough to avoid not finishing if accelerator conditions make completing the documentation difficult.

# *Pbar Electronic Log Chapters*

- **Step 1**: Create Elog chapter(s)
  - **Problem**: The Fall 2004 Entry (Pbar 2004, Chapter 462) was so long, that it takes a number of minutes to load all of the images.
  - **Solution**:

    Break into multiple elog chapters (should be consecutive in Elog):

# *Electronic Logbook Chapters*

- Option #1:  By Category
  - Index and Save File
  - Instrumentation (BPMs, BLMs, Toroids, SEMs, IC728)
  - Diagnostics (Scope Traces, Vacuum, VSA, Proton Torpedo)
  - Power Supplies (Ramps)
  - Stochastic Cooling
  - RF
- Option #2:  By Machine
  - Index and Save File
  - Beam lines
  - Target
  - Debuncher
  - Accumulator

# *Step 2: Making Entries*

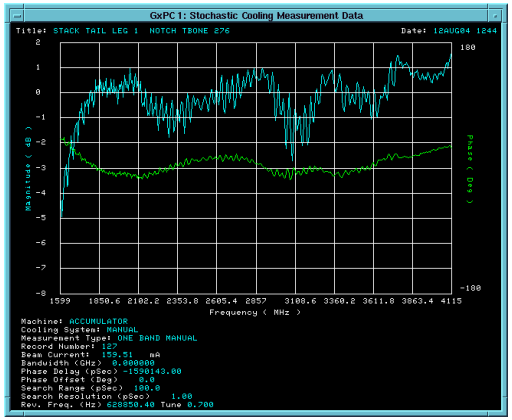
- **Step 2**: Make the Electronic Logbook Entries
  - Part 1: Document procedure for obtaining the data
  - Part 2: Collect the data

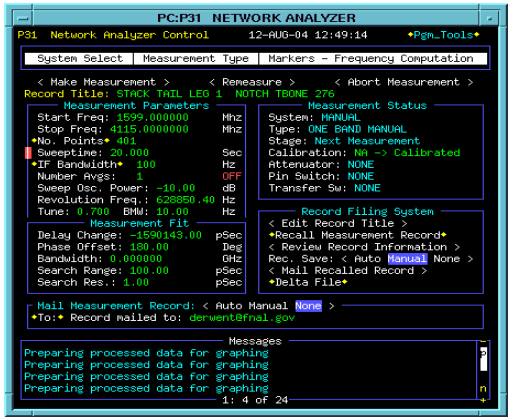
# *Entries: Part 1 - Procedure*

- **Fri Aug 13 08:09:30- Procedure for measuring the Notch Filters** for the Debuncher Cooling and Stacktail Leg 1, Leg 2 and Common Leg. The stacktail is off for leg 1 and 2 measurements. The stacktail is on for the common leg measurment. Three pages are needed: Cooling Graphics (P27), Network Analyzer Page (P31), and Switch Tree Program (P35):
  - Open the Network Analyzer Program P31:
    - Click MEASURE on the popup window that appears when you first enter the page.
    - Wait for the program to connect to the Network Analyzer.
    - Click on "System Select" on the top menu bar and select "MANUAL."
    - Click on "Measurement Type" on the top menu bar and select "ONE BAND MANUAL"
    - In the lower right portion of the screen, click on "Recall Measurement Record."
  - …..continued…..see Pbar Electronic log

# *Entries: Part 2 – The Data*

- Thu Aug 12 12:49:54-




- PFD BED

  *-- Thu Aug 12 12:51:48 comment by...PFD BED --* Leg 1 Notch Filter, delay set to 628874 Hz (1.590143 micro-seconds).

# *Part 3: Create the Checklist*

- The checklist will be in the Pbar Tuning Guide and the Pbar Electronic Logbook for easy access.

# Checklist Page 1 of 3

- **Pbar Running Conditions Checklist**
- **Last Updated 11/14/2005 14:13:20 by Brian Drendel**
  Send comments and suggestions to the ad-pbar-tuning-adminNOSPAM@fnal.gov (remove NOSPAM)
- 
- This page organizes log book entries that document the Pbar running conditions prior to major shutdowns. The 2004 Pbar Elog Entry #462 documents the running conditions before the Fall 2004 shutdown, and the 2003 Pbar elog Entry #254 documents the running conditions before the Fall 2003 shutdown. After each item listed on this page are links to the individual entries that cover that particular item. Click on links labeled "Fall 2004" to go to results from the 2004 save, or click on links labeled "Fall 2003" to go to results from the Fall 2003 save. Sometime multiple elog entries were made on a particular topic during one of the saves. In this case, I reference each entry in the format (Fall 2004: entry 1, entry 2, entry 3,....). Clicking on "entry 1", "entry 2" etc.. would bring up the individual entries. If the particular topic was not documented before a shutdown on a certain *{Date}*, there will be a tag that says (*{Date}* - was not completed). Send comments and sugg
- 
- D1 Save
  - Stacking – (Fall 2004) (Fall 2003)
  - Reverse Protons – (Fall 2004) (Fall 2003)
- BPM Orbits
  - P1/P2/AP1 – (Fall 2004) (Fall 2003 - was not completed)
  - Debuncher – (Fall 2004: Reverse Proton Orbit) (Fall 2003 - was not completed)
  - Accumulator -
    - Core Orbits while stacking – (Fall 2004) (Fall 2003)
- BLMs: FTPs and Acnet Parameter Readbacks. P46 for Debuncher and Accumulator.
  - AP1 – (Fall 2004: entry 1, entry 2) (Fall 2003)
  - AP2 – (Fall 2004) (Fall 2003 - was not completed)
  - Debuncher – (Fall 2004) (Fall 2003 - was not completed)
  - D/A – (Fall 2004 - was not completed) (Fall 2003 - was not completed)
  - Accumulator - (Fall 2004) (Fall 2003 - was not completed)
  - AP3 – (Fall 2004 - was not completed) (Fall 2003 - was not completed)

# *Checklist Page 2 of 3*

- SEMs/Multiwires - Profiles from P58 or P56. Histograms of areas?
  - P1/P2 – (Fall 2004) (Fall 2003)
  - AP1 – (Fall 2004) (Fall 2003)
  - Target SEM – (Fall 2004) (Fall 2003 - was not completed)
  - AP2 – (Fall 2004: SEM Profiles, Procedure) (Fall 2003)
  - D/A – (Fall 2004)(Fall 2003: Profiles, Histograms, SEM806)
  - AP3 – (Fall 2004 - was not completed) (Fall 2003 - was not completed)
- Vacuum - Java Application and Acnet Parameter Pages:
  - AP1 – (Fall 2004) (Fall 2003)
  - AP2 – (Fall 2004) (Fall 2003)
  - Debuncher – (Fall 2004) (Fall 2003)
  - D to A – (Fall 2004) (Fall 2003)
  - Accumulator – (Fall 2004) (Fall 2003)
  - AP3 – (Fall 2004) (Fall 2003)
- Diagnostic Scope Traces – (Fall 2004) (Fall 2003)
- Proton Torpedo Histograms – (Fall 2004) (Fall 2003 - was not completed)
- Camac 165 Ramps (P62) – (Fall 2004) (Fall 2003)
- P1/P2 Line Ramps (I68) – (Fall 2004) (Fall 2003)
- Target Scan – (Fall 2004) (Fall 2003)
- VSA D-to-A Efficiency Histograms– (Fall 2004) (Fall 2003: entry 1, entry 2, entry 3)
- IC728, Tor109, INJFLX histograms – (Fall 2004) (Fall 2003)
- Debuncher Longitudinal Signals
  - Longitudinal Schottky during stacking – (Fall 2004) (Fall 2003 - was not completed)
  - Momentum Aperture measurement – (Fall 2004: Reverse Protons) (Fall 2003)
  - DP2-SCH zoomed in end of the cycle. Compare DRF2 on and off – (Fall 2004 - see 11:17:55am comment) (Fall 2003)
  - Bunch Rotation Signal (Fall 2004) (Fall 2003)
- Debuncher Transverse Signals
  - Tune Measurement – (Fall 2004) (Fall 2003: Horizontal, Vertical)

# Checklist Page 3 of 3

- Debuncher Cooling
  - Copy of P34 – (Fall 2004) (Fall 2003)
  - Debuncher Notch Filter Measurement (Fall 2004: Debuncher Measurement, Procedure) (Fall 2003 - was not completed)
  - DP1-SCH,…,DP4-SCH over time. – (Fall 2004: Band 1, Band 2 , Band 3: Upper, Lower, Band 4: Upper, Lower) (Fall 2003 - was not completed)
  - DH1-SCH,…,DH4-SCH over time. – (Fall 2004: Band 1, Band 2 , Band 3: Upper, Lower, Band 4: Upper, Lower) (Fall 2003 - was not completed)
  - DV1-SCH,…,DV4-SCH over time. – (Fall 2004: Band 1, Band 2 , Band 3: Upper, Lower, Band 4: Upper, Lower) (Fall 2003 - was not completed)
  - Broadband View of Debuncher Cooling Systems (Fall 2004) (Fall 2003 - was not completed)
  - Plot TWT power with gain ramping – (Fall 2004: Horizontal, Vertical, Momentum) (Fall 2003 - was not completed) .
  - Debuncher Momentum Bands 1 – 4 final asymptotic widths – (Fall 2004) (Fall 2003)
- Debuncher RF
  - DRF1 Graphics Display – (Fall 2004) (Fall 2003)
  - Bunch Rotation Display (Fall 2004) (Fall 2003)
  - DRF1 Phase Errors (Fall 2004) (Fall 2003 - was not completed)
- Debuncher Admittance Measurement with reverse protons (Fall 2004) (Fall 2003 - was not completed)
- Beam Lifetime in Accumulator
  - Stacking Lattice (Fall 2004) (Fall 2003)
  - Shot Lattice – (Fall 2004) (Fall 2003)
- Accumulator Signals
  - Spectrum Analyzer trace of Accumulator Injection Orbit – (Fall 2004) (Fall 2003: entry 1, entry 2)
  - Spectrum Analyzer trace of Accumulator Deposition Orbit – (Fall 2004) (Fall 2003)
- Accumulator Cooling
  - Stacking Profile and P34 display of Accumulator Cooling Systems – (Fall 2004) (Fall 2003)
  - Core cooling Signal Suppression (Fall 2004) (Fall 2003 - was not completed)
  - Stacktail Notch Filter Measurements (Fall 2004: Leg 1, Leg 2, Common Leg, Procedure) (Fall 2003 - was not completed)
- Accumulator Tunes
  - When changing lattices (Fall 2004) (Fall 2003 - was not completed)
  - Across the Aperture - (Fall 2004) (Fall 2003)
  - Manual tune Measurement during stacking (Fall 2004) (Fall 2003 - was not completed)
- ARF1 operating conditions during stacking – (Fall 2004) (Fall 2003 - was not completed)
- Accumulator Bus Supplies (Fall 2004) (Fall 2003 - was not completed)
- Accumulator Admittance – (Fall 2004 - was not completed) (Fall 2003 - was not completed)
- Shot Setup
  - Jello Unstacking Display screen captures- (Fall 2004) (Fall 2003 - was not completed)